

Appl. No. 10/820,020
Amendment dated: February 25, 2008
Reply to OA of: August 24, 2007

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(currently amended). A water treatment reactor for simultaneous electrocoagulation and advanced oxidation processes comprising:

an upright sealed tank, the upright sealed tank having a metal body, or a metallic material mounted on an inner wall thereof, for use as a cathode;

a sacrificial electrode used as an anode which is disposed in the tank and non-electrically connected to the cathode;

an intake tube for introducing influent water into the bottom of the tank;

an air input for introducing air or oxygen-containing gas into the bottom of the tank;

a mixing device disposed in the bottom of the tank for enabling mixing of the influent water;

an outlet tube for venting processed water from a top of the tank;

a gas-liquid separator which is in fluid communication with the tank at the top of the tank for expelling a gas from the tank without water expelling; and

a direct current supply having a positive electrode electrically connected to the anode and a negative electrode electrically connected to the cathode,

wherein influent water introduced into the bottom of the tank by the intake tube and air or oxygen-containing gas introduced into the bottom of the tank by the air input are mixed by the mixing device disposed in the bottom of the tank.

2(original). The reactor as claimed in claim 1 further comprising an oxidant supply device mounted on the intake tube.

3(original). The reactor as claimed in claim 2, wherein the oxidant supply

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device includes a venturi in fluid communication with the intake tube.

4(original). The reactor as claimed in claim 1, wherein the sacrificial electrode is made of iron, aluminum, copper or stainless steel.

5(original). The reactor as claimed in claim 4, wherein the sacrificial electrode is made of iron.

6(original). The reactor as claimed in claim 1, wherein the reactor is made of stainless steel.

7(original). The reactor as claimed in claim 1, wherein the mixing device further comprises a spiral board, a packing material or a perforated dish.

8(original). The reactor as claimed in claim 1, wherein the gas-liquid separator further comprises a gas-liquid separating valve.